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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/643,983
Filing Date: August 23, 2000
Appellant(s): FRENGER ET AL.

John R. Lastova
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/15/2005 appealing from the Office action mailed 06/28/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is deficient. 37 CFR 41.37(c)(1)(v) requires the summary of claimed subject matter to include: (1) a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number, and to the drawing, if any, by reference characters and (2) for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function as permitted by 35 U.S.C. 112, sixth paragraph, must be identified and the structure, material, or acts described in the specification as corresponding to each claimed function must be set forth with reference to the specification by page and line number, and to the drawing, if any, by reference characters. The brief is deficient because the Applicant argues subject matter not in the claims and hence the applicant fails to present a Summary of **Claimed Subject Matter**. For example, on page 5, lines 4-6, the Applicant argues, "The present invention pre-processes data packets by performing processing operations that do not depend on the **selection** of a particular modulation scheme and/or coding rate" [Emphasis Added], which is apparently the Appellant's basis for appeal. Nowhere does the Apellant's claim language recite "performing processing operations that do not depend on the **selection** of a particular modulation scheme and/or coding rate". Instead claim 1 recites, "the pre-processing does not depend on

the current channel condition". The Authoritative Dictionary of IEEE Standards Terms defines channel as a single path for transmitting electric signals, usually, in distinction from parallel paths; hence, for example, every component in the Figure on page 5 of the Appellant's Appeal Brief is part of the communication channel comprising the components since it is a single path for transmitting electric signals and every component in the Figure on page 5 of the Appellant's Appeal Brief depends of the current channel condition, especially, if the current channel condition deteriorates to the point where communication is impossible since none of the devices in the channel will be able to communicate. That is dependence on current channel conditions has little to do with dependence on "the **selection** of a particular modulation scheme and/or coding rate" since channel components always depend on a current channel condition and **the selection** of a particular channel device for use as a channel component as taught the Appellant's disclosure may depend on current channel conditions.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

A substantially correct copy of appealed claims 1-53 appears on pages A1-A8 of the Appendix to the appellant's brief. The minor errors are as follows: no identifier identifying claim status has been provided.

(8) Evidence Relied Upon

5,701,294	Ward et al.	12-1997
6,397,367	Park et al.	5-2002

3rd Generation Partnership Project', Technical Specification Group Group Radio Access Network; Multiplexing and channel coding (FDD) [3G TS 25.212 version 3.1.0)

Stephen B. Wicker, "Error Control Systems for Digital Communications and Storage", Prentice-Hall, 1995, pages 392-409

(9) Grounds of Rejection

Introduction

Claim 1 recites the limitation, "the pre-processing does not depend on the current channel condition", which is currently the main issue of contention for independent claims. The Authoritative Dictionary of IEEE Standards Terms defines channel as a single path for transmitting electric signals, usually, in distinction from parallel paths; hence, for example, every component in the Figure on page 5 of the Appellant's Appeal Brief is part of the communication channel comprising the components since it is a single path for transmitting electric signals and every component in the Figure on page 5 of the Appellant's Appeal Brief depends of the current channel condition, especially, if the current channel condition deteriorates to the point where communication is impossible since none of the devices in the channel will be able to communicate. That is dependence on current channel conditions has little to do with dependence on "the **selection** of a particular modulation scheme and/or coding rate" since channel components always depend on a current channel condition and **the selection** of a particular channel device for use as a channel component as taught the Appellant's disclosure may depend on current channel conditions. Hence, although, the Appellant's claim 1 recites, "the pre-processing does not depend on the current channel condition", that is not what the Appellant means. What the Appellant most likely intends is the following: --the pre-processing does not depend on a **monitored** channel condition-- or --the pre-processing does not depend on a **currently monitored** channel condition--. If the Appellant files a Reply Brief, the Appellant is free to select the Appellant's interpretation. **Even though the Appellant's claim language does not warrant any**

such interpretations, in the interest of speeding up prosecution, the Examiner will demonstrate that Ward teaches both interpretations.

Finally, it appears to the Examiner that the Appellant has purposely introduced 112 issues in the hopes of creating confusion as to what the Appellant's claimed invention is. As the Appellant argues, the Appellant switches interpretation of "pre-processing does not depend on a current channel condition" from "pre-preprocessing independent of detecting the **current** channel condition" (lines 9-10 on page 11 of the Appellant's Appeal Brief) to "performed in dependence on the channel condition determination" (lines 11-12 on page 12 of the Appellant's Appeal Brief; Note: the Appellant is interpreting the claim language as a monitored channel condition in this case not a monitored current channel condition). Such claim language is commonly sought after for the purposes of future litigation so that Appellant's can argue the language anyway the Appellant sees fit. Such language ties up the courts with frivolous lawsuits having to determine the scope and bounds of the claimed invention during litigation when it should have been determined during prosecution of the application prior to allowance. **As said before, even though the Appellant's claim language does not warrant any such interpretations, in the interest of speeding up prosecution, the Examiner will demonstrate that Ward teaches both interpretations.**

In spite of the obvious 112 issues with the Appellant's current claim language, the Examiner has determined that it is not necessary to hold up prosecution of the

application at this point by withdrawing finality and introducing a 112 rejection since the Prior Art of record teach any reasonable interpretation of the Appellant's claim language and it is the Examiner's opinion that the application is ready to go to appeal.

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 10, 34 and 35 rejected under 35 U.S.C. 102(b) as being anticipated by Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward).

35 U.S.C. 102(e) rejection of claims 1-3, 10, 34 and 35.

Ward teaches pre-processing data packets for transmission over the communications channel including performing a first coding operation on those data packets to form pre-processed data packets (col. 9, lines 5-25 in Ward teach that Speech Coder 21 in Figure 3A of Ward includes a Low Delay Code Excited Linear Predictive [LDCELP] compression coder for preprocessing input speech to produce LDCELP compression code; Note: an LDCELP compression coder is a coder for compressing a digital-coded speech signal; hence a speech coder **must have** an analog-to-digital preprocessor as

well to digitally code an analog signal into a digitally-coded speech signal, which is then compression coded); detecting a current channel condition (See Step 41 in Figure 6 of Ward) and processing the pre-processed data packets including modulating the pre-processed data packets using a modulation scheme selected from a group of different modulation schemes based on the detected current channel condition and coding the pre-processed data packets using a coding rate selected from a group of different coding rates based on the detected current channel condition to form processed data packets ready for transmission over the communications channel (Channel Coder 22 and Modulator 23 in Figure 3A of Ward are a processor for processing the pre-processed data packets including modulating the processed data packets using a modulation scheme selected from a group of different modulation schemes based on the detected current channel condition and coding the pre-processed data packets using a coding rate selected from a group of different coding rates based on the detected current channel condition to form processed data packets ready for transmission over the communications channel; see Abstract in Ward), wherein the pre-processing does not depend on the **monitored** channel condition (a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to compression coding, the analog-to-digital preprocessor is a preprocessor for coding analog signals into a digitally-coded speech signals that does not depend on any monitored channel condition; Note: Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP

compression pre-processor only depends on a Low Delay Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions). Even if, the Examiner assumes the Applicant intended --the pre-processing does not depend on a **currently monitored** channel condition--.

Ward teaches continuous monitoring channel conditions. If the channel is continuously monitored (see Abstract in Ward), the Examiner fails to see why there is any need in Ward to wait for the current channel condition to be determined. The Examiner Assumes that Ward is intelligent enough to recognize the importance of timely data communications and to recognize that that dynamic adaptations to the coding rate must be based on previous monitored channel conditions without waiting for a currently monitored channel condition. The system of Figure 3A in Ward is designed to optimize voice quality not to introduce delays in voice transmissions to purposely bog down voice communications that inherently degrade voice communications. The bottom line is, nowhere in the Ward patent, does Ward indicate that any device in Figure 3A must wait for a currently monitored channel condition and only teaches that continuously monitored channel conditions are used, which insures that a current monitored channel condition is not required for the decision process since previously monitored channel conditions are available. The concept is elementary.

35 U.S.C. 102(e) rejection of claim 4.

TDMA is a wireless communication transmission service hence the error rate is related to the wireless communication transmission service since it occurs in the communication channel for the wireless communication transmission service.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 5 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward) in view of Park; Chang-Soo et al. (US 6397367 B1, hereafter referred to as Park).

35 U.S.C. 103(a) rejection of claims 5 and 36.

Ward substantially teaches the claimed invention described in claims 1-4 (as rejected above).

However Ward does not explicitly teach the specific use of fixed rate encoding.

Park, in an analogous art, teaches fixed rate channel encoders in Figures 1-16 of Park whereby rate adaptation is achieved through puncturing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward with the teachings of Park by including use of fixed rate encoding. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of fixed rate encoding would have provided the opportunity to communicate on a W-CDMA channel.

Claims 6-9, 13-16, 37-39 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward) in view of the 3GPP document (3rd Generation Partnership Project; Technical Specification Group Group Radio Access Network; Multiplexing and channel coding (FDD) [3G TS 25.212 version 3.1.0]).

35 U.S.C. 103(a) rejection of claim 6-9, 13-16, 37-39 and 42-44.

Ward substantially teaches the claimed invention described in claim 6 (as rejected above).

However Ward does not explicitly teach the specific use of combining data packets.

The 3GPP document, in an analogous art, teaches use of combining data packets (see TrBk Concatenation And Code Block Segmentation block in Figure 1 on page 9 of the 3GPP document).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward with the teachings of 3GPP document by including use of combining data packets. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of combining data packets would have provided the opportunity to communicate on a W-CDMA channel that is 3GPP compliant.

Claims 11 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward).

35 U.S.C. 103(a) rejection of claims 11 and 41.

Ward substantially teaches the claimed invention described in claims 1-4 (as rejected above).

However Ward does not explicitly teach the specific use of particular modulation schemes.

The Examiner asserts that the Abstract in Ward teaches processing the pre-processed data packets including modulating the pre-processed data packets using a modulation

scheme selected from a group of different modulation schemes which encompasses specific modulation schemes.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Ward by including use of particular modulation schemes. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of particular modulation schemes would have provided the opportunity to implement the teachings in Ward.

Claims 18-21 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward) and the 3GPP document (3rd Generation Partnership Project; Technical Specification Group Group Radio Access Network; Multiplexing and channel coding (FDD) [3G TS 25.212 version 3.1.0]) in view of Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communications and Storage", Prentice-Hall, 1995, pages 392-409).

35 U.S.C. 103(a) rejection of claims 18 and 45.

Ward and the 3GPP document substantially teaches the claimed invention described in claims 1-17 (as rejected above).

However Ward and the 3GPP document does not explicitly teach the specific use of any specific retransmission protocol.

Wicker, in an analogous art, teaches a specific retransmission protocol whereby

processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block (Section 15.2 on Page 402 in Wicker teaches that each time the transmitter sends out a packet a timer is set and if a response is not received within a reasonable time period, the transmitter assumes a retransmission request and retransmits the packet). Wicker teaches that one of ordinary skill in the art at the time the invention was made would have been highly motivated to use such a scheme when the feedback channels experiences noise degradation (Section 15.2 on Page 402 in Wicker).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward and the 3GPP document with the teachings of Wicker by including use of a specific retransmission protocol whereby processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a specific retransmission protocol whereby processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block would have provided the opportunity to overcome noisy feedback channels.

35 U.S.C. 103(a) rejection of claim 19.

Lines 24-33 on page 398 in Wicker teach that a go-back-N protocol requires buffering in the transmitter to store packets that may need to be retransmitted.

35 U.S.C. 103(a) rejection of claims 20-21.

Since Modulator 23 in Figure 3A of Ward can be adjusted based on the detected current channel conditions, processing may be the same or different depending on the detected channel condition.

Claims 22, 23, 26, 28-30, 46, 47, 50 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward) in view of the 3GPP document (3rd Generation Partnership Project; Technical Specification Group Group Radio Access Network; Multiplexing and channel coding (FDD) [3G TS 25.212 version 3.1.0]) in further view of Park; Chang-Soo et al. (US 6397367 B1, hereafter referred to as Park).

35 U.S.C. 103(a) rejection of claim 22, 23, 26, 28-30, 46, 47, 50 and 52.

Ward teaches pre-processing data packets for transmission over the communications channel including performing a first coding operation on those data packets to form pre-processed data packets (Speech Coder 21 in Figure 3A of Ward is a preprocessor for pre-processing data packets for transmission over the communications channel including performing a first coding operation on those data packets to form

pre-processed data packets); detecting a current channel condition (See Figure 6 of Ward) and processing the pre-processed data packets including modulating the pre-processed data packets using a modulation scheme selected from a group of different modulation schemes based on the detected current channel condition and coding the pre-processed data packets using a coding rate selected from a group of different coding rates based on the detected current channel condition to form processed data packets ready for transmission over the communications channel (Channel Coder 22 and Modulator 23 in Figure 3A of Ward are a processor for processing the pre-processed data packets including modulating there-processed data packets using a modulation scheme selected from a group of different modulation schemes based on the detected current channel condition and coding the pre-processed data packets using a coding rate selected from a group of different coding rates based on the detected current channel condition to form processed data packets ready for transmission over the communications channel; see Abstract in Ward), wherein the pre-processing does not depend on the current channel condition (the Abstract in Ward teaches any combination of speech encoding, modulation and channel encoding modified dependent upon channel condition, hence; is inherently capable of operating whereby the speech encoding pre-processing does not depend on the current channel condition [see, e.g., In re Schreiber, 128 F.3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997) and In re Swinehart, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971)]).

However Ward does not explicitly teach the specific use of combining data packets.

The 3GPP document, in an analogous art, teaches use of combining data packets (see TrBk Concatenation And Code Block Segmentation block in Figure 1 on page 9 of the 3GPP document).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward with the teachings of 3GPP document by including use of combining data packets. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of combining data packets would have provided the opportunity to communicate on a W-CDMA channel that is 3GPP compliant.

However Ward and the 3GPP document does not explicitly teach the specific use of fixed rate encoding with puncturing.

Park, in an analogous art, teaches fixed rate channel encoders in Figures 1-16 of Park whereby rate adaptation is achieved through puncturing.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward and the 3GPP document with the teachings of Park by including use of fixed rate encoding. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of fixed rate encoding would have provided the opportunity to communicate on a W-CDMA channel.

Claims 31-33 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward; Torbjorn et al. (US 5701294 A, hereafter referred to as Ward, the 3GPP document (3rd Generation Partnership Project; Technical Specification Group Group Radio Access Network; Multiplexing and channel coding (FDD) [3G TS 25.212 version 3.1.0]) and of Park; Chang-Soo et al. (US 6397367 B1, hereafter referred to as Park) in view of in view of Wicker (Stephen B. Wicker, "Error Control Systems for Digital Communications and Storage", Prentice-Hall, 1995, pages 392-409).

35 U.S.C. 103(a) rejection of claims 31 and 53.

Ward and the 3GPP document substantially teaches the claimed invention described in claims 1-17 (as rejected above).

However Ward and the 3GPP document does not explicitly teach the specific use of any specific retransmission protocol.

Wicker, in an analogous art, teaches a specific retransmission protocol whereby processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block (Section 15.2 on Page 402 in Wicker teaches that each time the transmitter sends out a packet a timer is set and if a response is not received within a reasonable time period, the transmitter assumes a retransmission request and retransmits the packet). Wicker teaches that one of ordinary skill in the art at the time the invention was made would have been highly motivated to use such a scheme when the feedback channels experiences noise degradation (Section 15.2 on

Page 402 in Wicker).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ward and the 3GPP document with the teachings of Wicker by including use of a specific retransmission protocol whereby processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of a specific retransmission protocol whereby processing for the protocol requires waiting for an acknowledgement signal for each of the data blocks and if an acknowledgement signal is not received for one of the data blocks, retransmitting the data block would have provided the opportunity to overcome noisy feedback channels.

35 U.S.C. 103(a) rejection of claims 32 and 33.

Lines 24-33 on page 398 in Wicker teach that a go-back-N protocol requires buffering in the transmitter to store packets that may need to be retransmitted.

(10) Response to Argument

The Appellant contends, "**Some data transmission processing operations in a radio communications system depend on certain current radio channel conditions**, and

therefore, those processing operations need to be dynamically adaptable" [Emphasis Added].

The Authoritative Dictionary of IEEE Standards Terms defines channel as a single path for transmitting electric signals, usually, in distinction from parallel paths; hence, for example, every component in the Figure on page 5 of the Appellant's Appeal Brief is part of the communication channel comprising the components since it is a single path for transmitting electric signals and every component in the Figure on page 5 of the Appellant's Appeal Brief depends of the current channel condition, especially, if the current channel condition deteriorates to the point where communication is impossible since none of the devices in the channel will be able to communicate. Hence, although, the Appellant's claim 1 recites, "the pre-processing does not depend on the current channel condition", that is not what the Applicant means. What the Applicant intends is the following: --the pre-processing does not depend on a **monitored** channel condition-- or --the pre-processing does not depend on a **currently monitored** channel condition--.

The Appellant contends, "Some data transmission processing operations in a radio communications system depend on certain current radio channel conditions, and therefore, **those processing operations need to be dynamically adaptable**" [Emphasis Added]. The Examiner assumes the Applicant intended --Some data transmission processing operations in a radio communications system depend on certain **monitored** radio channel conditions, and therefore, **those processing operations need to be dynamically adaptable**--.

That is incorrect. The Examiner would like to point out most Prior Art do not teach any processing including pre-processing dependant on **monitored** radio channel conditions, for example, Figure 3 of Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP compression pre-processor only depends on a Low Delay Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions. The LDCELP compression pre-processor in the speech encoder in Ward is **not** a dynamically adaptable device. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device.

Even if, the Examiner assumes the Applicant intended --Some data transmission processing operations in a radio communications system depend on certain **currently monitored** radio channel conditions, and therefore, **those processing operations need to be dynamically adaptable**--.

Ward teaches continuous monitoring channel conditions. If the channel is continuously monitored (see Abstract in Ward), the Examiner fails to see why there is any need in Ward to wait for the current channel condition to be

determined. The Examiner Assumes that Ward is intelligent enough to recognize the importance of timely data communications and to recognize that that dynamic adaptations to the coding rate must be based on previous monitored channel conditions without waiting for a currently monitored channel condition. The system of Figure 3A in Ward is designed to optimize voice quality not to introduce delays in voice transmissions to purposely bog down voice communications that inherently degrade voice communications. The bottom line is, nowhere in the Ward patent, does Ward indicate that any device in Figure 3A must wait for a currently monitored channel condition and only teaches that continuously monitored channel conditions are used, which insures that a current monitored channel condition is not required for the decision process since previously monitored channel conditions are available. The concept is elementary.

The Appellant contends, "But: on the other hand, the inventors of the present application recognized that certain other processing operations do not depend on **monitored** channel conditions".

The Examiner assumes the Applicant intended --But: on the other hand, the inventors of the present application recognized that certain other processing operations do not depend on **monitored** channel conditions--.

As pointed out, above, most Prior Art do not teach any processing including pre-processing dependant on **monitored** radio channel conditions, for example, Figure 3 of

Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP compression pre-processor only depends on a Low Delay Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions. The LDCELP compression pre-processor in the speech encoder in Ward is **not** a dynamically adaptable device. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device.

Even if, the Examiner assumes the Applicant intended -- But: on the other hand, the inventors of the present application recognized that certain other processing operations do not depend on **currently monitored** channel conditions --.

Ward only teaches that *continuously* monitored channel conditions are required not *currently* monitored channel conditions, which insures that a current monitored channel condition is not required for the decision process since previously monitored channel conditions are available. The concept is elementary.

The Appellant contends, "As a result, they can be performed in advance without waiting for a current channel condition to be detected or for processing determinations to be made that do depend on the current channel condition".

The Examiner assumes the Applicant intended --As a result, they can be performed in advance without waiting for a current channel condition to be detected or for processing determinations to be made that do depend on the **monitored** channel condition--.

As pointed out, above, most Prior Art do not teach any processing including pre-processing dependant on **monitored** radio channel conditions, for example, Figure 3 of Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device and can be performed in advance without waiting for a current channel condition to be detected.

Even if, the Examiner assumes the Applicant intended -- As a result, they can be performed in advance without waiting for a current channel condition to be detected or for processing determinations to be made that do depend on the **currently monitored** channel condition--.

Ward only teaches that *continuously* monitored channel conditions are required not *currently* monitored channel conditions, which insures that a current monitored channel condition is not required for the decision process since previously monitored channel conditions are available.

The Appellant contends, "More specifically, as described in the summary above and in the instant application, certain packet processing operations, channel encoding operations, and buffering operations may be performed as soon as the data packets are available, and there is no need to wait for the current channel condition to be determined. By performing computationally intensive operations that do not depend on the modulation scheme or coding rate in advance, processing efficiency is increased. Neither this recognition nor this advantage is described in Ward".

That is incorrect. Figure 3 of Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device and can be performed in advance without waiting for a current channel condition to be detected.

In addition, Ward teaches continuous monitoring. If the channel is continuously monitored (see Abstract in Ward), the Examiner fails to see why there is any need in Ward to wait for the current channel condition to be determined. The Examiner Assumes that Ward is intelligent enough to recognize the importance of timely data communications and to recognize that that dynamic adaptations to the coding rate must be based on previous monitored channel conditions without waiting for a current monitored channel condition. The system of Figure 3A in Ward is designed to optimize voice quality not to introduce delays in voice transmissions to purposely bog down voice communications that inherently degrade voice communications. The bottom line is, nowhere in the Ward patent, does Ward indicate that any device in Figure 3A must wait for a current channel condition and only teaches that continuously monitored channel conditions are used, which insures that a current channel condition is not required for the decision process since previously monitored channel conditions are available. The concept is elementary.

The Appellant contends, "This division of processing operations into pre-processing operations that do not depend on the current channel condition and processing operations that do depend on the current channel condition is quite different than Ward's approach in which all such operations are performed dependent upon the current detected channel conditions. This is apparent when viewing Ward's Fig. 3A in which "arrows" from the "combination type" Table 28 are directed to every of the

processing blocks, indicating that each operation performed is dynamically adjustable depending upon the current channel condition. Appellants are not suggesting, as the Examiner asserts in the Advisory Action, this figure requires that 'switching of all processors in Figure 3A of Ward **must respond to channel conditions'**" [Emphasis added].

However, it still does not require that switching of all processors in Figure 3A of Ward must respond to *current* channel conditions, which is what the Appellant is claiming.

The Appellant contends, "Significantly, there is no disclosure or suggestion in Ward that some operations not be performed in dependence on the channel condition determination".

Figure 3 of Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP compression pre-processor only depends on a Low Delay Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions. The

LDCELP compression pre-processor in the speech encoder in Ward is **not** a dynamically adaptable device. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device.

The Appellant contends, "No where does Ward distinguish between a first pre-processing stage that does not depend on current channel conditions and a second processing stage that does. All processing stages in Ward are grouped together for each combination type. And each combination type is selected once the current channel condition is known so that the best combination type for that condition is selected. Processing of speech cannot occur by the speech coder 21 in Ward until and unless one of the combination types has been selected.

The Examiner would like to point out that Applicant's are required to use different reference numerals for different components in the drawings hence the reference numeral 21 refers to both the speech coder in Figure 3 and Figure 3A. In Figure 3A, the Speech Coder 21 does not depend from any monitored channel condition whatsoever. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP compression pre-processor only depends on a Low Delay

Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions. The LDCELP compression pre-processor in the speech encoder in Ward is **not** a dynamically adaptable device. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device.

The Appellant contends, "Claims 5 and 36 require that "the pre-processing includes channel encoding the data packets at a fixed coding rate." Ward does not teach this, and Park is cited to show fixed rate encoding. But the claims are not directed simply to fixed rate encoding. The claims require that the pre-processing coding operation be channel encoding (as opposed to speech or source coding) and that it be performed at a fixed rate. Park, as already established earlier in the prosecution of this application, does not teach the claimed preprocessing. So even if the two references were combined, they would still not teach every feature from their respective independent claims".

Col. 9, lines 5-25 in Ward teach that Speech Coder 21 in Figure 3A of Ward includes a Low Delay Code Excited Linear Predictive [LDCELP] compression coder for preprocessing input speech to produce LDCELP compression code; Note: an LDCELP compression coder is a coder for compressing a digital-coded speech signal; hence a speech coder **must have** an analog-to-digital preprocessor as well to digitally code an analog signal into a digitally-coded speech signal, which is then compression coded.

The LDCELP compression coder is a preprocessor and col. 9; lines 5-10 teach that the LDCELP compression coder has a fixed coding rate 16kbps. An analog-to-digital preprocessor is a fixed rate preprocessor as well.

The Appellant contends, "Claims 5 and 36 require that 'the pre-processing includes channel encoding the data packets at a fixed coding rate.' Ward does not teach this, and Park is cited to show fixed rate encoding. But the claims are not directed simply to fixed rate encoding. The claims require that the pre-processing coding operation be channel encoding (as opposed to speech or source coding) and that it be performed at a fixed rate. Park, as already established earlier in the prosecution of this application, does not teach the claimed preprocessing. So even if the two references were combined, they would still not teach every feature from their respective independent claims. Moreover, there is no proper motivation to combine these two patents. The whole point of Ward is to have the flexibility to change the combination type to match the current channel condition. Indeed, Table 11 shows the rates change depending on which combination type is selected".

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re*

Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, both Ward and Park are directed to adaptive rate matching. For Example, in Figure 6 of Park, everything to the left of Rate matcher 605 is a preprocessor with a fixed rate and does not change rate subject to monitored channel conditions and everything to the right of Rate matcher 605 adapts to channel rate matcher 605; Figure 8A teaches channel rate adaptation prior to channel coding so that channel coding depends from channel rate adaptation decisions whereas the CRC preprocessing unit does not. The Park reference is brought in to emphasize that the prior art teaches that rate adaptation can occur any where in the communication channel.

The Appellant contends, "For claims 6-9, 13-16, 37-39, and 42-44, the Examiner adds the 3GPP technical specification. This 3GPP technical specification does not remedy the deficiencies in Ward demonstrated above. The various operations are not described as being performed as part of a pre-processing stage that does not depend on the detected channel condition".

That is the Appellant's opinion and amounts essentially to mere pleading, unsupported by proof or a showing of facts. Specifically, all of the operations in claims 6-9, 13-16, 37-39, and 42-44 are channel operations and Ward teaches, as pointed out above, "a pre-processing stage that does not depend on the detected channel condition".

The Appellant contends, "The rejection of claims 18-21 and 45 requires the citation of Ward, the 3GPP technical specification, and Wicker. The text in Wicker on page 402

relied on by the Examiner simply relates to ARQ for individual packets. But the claims rejected require that multiple data packets be combined into data blocks. The advantages of reduced ARQ signaling using this block approach were explained in the Summary section above. So even if the combination could be made (the rejection is now up to three references), that combination would not result in the claimed features. Nor does Wicker remedy the deficiencies noted above for the claims upon which claims 18-21 and 45 depend".

Figure 2 of 3GPP teaches a TRCH multiplexer for combining packets into a serially concatenated data block. The fact that three references are used is not relevant. Ward, Wicker and the 3GPP technical specification teach well-known error correction techniques. One of ordinary skill in the art at the time the invention was made would have known that error-correcting techniques are widely used in combinations of more then one in order to solve communication problems.

In addition, the Appellants claim 6 recites, "the pre-processing includes combining the data packets into data blocks." Packets are data blocks and it is not clear how the data blocks distinguish themselves from packets.

The Appellant contends, "To reject claims 22, 23, 26, 28-30, 46, 47, _50, and 52, the Examiner relies on Ward, the 3GPP technical specification, and Park. Independent claim 22 sets forth multiple pre-processing steps that do not depend on the current channel condition and multiple processing steps that are performed based on the detected current channel condition. It has already been established that none of these

three references teach even the one pre-processing step or stage recited in claims 1 and 34, respectively. So plainly they lack a teaching of performing multiple pre-processing steps that do not depend on the current channel condition and multiple processing steps that are performed based on the detected current channel condition. Nor do they teach the following specific preprocessing steps or stages:

•combining a first set of data blocks to produce a first set of combined data blocks;

•combining a second set of data blocks to produce a second set of combined data blocks;

•encoding the first set of combined data blocks to produce a first channel encoded data block;

•encoding the second set of combined data blocks to produce a second channel encoded data block".

Figure 3 of Ward teaches the state of the Prior Art prior to the Ward patent whereby selection Speech Coding does not depend on **monitored** radio channel conditions. In addition, a speech coder **must have** an analog-to-digital preprocessor to digitally code an analog signal into a digitally-coded speech signal prior to LDCELP compression coding, the analog-to-digital preprocessor is a preprocessor within the Speech Coder for coding analog signals into a digitally-coded speech signals that does not depend on any **monitored** channel condition. Ward only teaches that selection of compression coding depends on **monitored** channel conditions, in fact, the actual pre-processing of the LDCELP compression pre-processor only depends on a Low Delay Code Excited Linear Predictive algorithm, which is independent of any **monitored** channel conditions. The

LDCELP compression pre-processor in the speech encoder in Ward is **not** a dynamically adaptable device. The analog-to-digital preprocessor of a speech encoder is **not** a dynamically adaptable device.

Figure 2 of 3GPP teaches a TRBk Concatenation/Code Block segmentation for concatenating, i.e., combining packets prior to channel coding.

Figure 2 of 3GPP teaches a TrCH multiplexing unit for combining a second set of data blocks to produce a second set of combined data blocks.

Figure 2 of 3GPP teaches Channel coding unit for encoding the first set of combined data blocks to produce a first channel encoded data block.

Figure 2 of 3GPP teaches Channel coding unit for encoding the first set of combined data blocks to produce a first channel encoded data block.

Figure 2 of 3GPP teaches Physical channel mapping unit for encoding the second set of combined data blocks encoding the second set of combined data blocks to produce a second channel encoded data block (channel mapping is a means for mapping data on to channel symbols hence is a channel coding technique).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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